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1 Papers: Automatic VLAN creation based on on-line measurement

Sean Rooney, Christian Hörtnagl, Jens Krause
July 1999 **ACM SIGCOMM Computer Communication Review**, Volume 29 Issue 3

Publisher: ACM Press

Full text available: [pdf\(806.29 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Virtual LANs (VLANs) permit hosts connected to a LAN switch to be grouped together into logical groups as a function of some management policy rather than simply of their physical location. Commercial LAN switches support a variety of policies based on either physical or logical addresses, protocol types, tagged frames, or user defined rules. The objective of these policies is the same: to reduce the amount of traffic that needs to be routed by grouping together hosts which are likely to communi ...



2 Migration Issues and Strategies for Token Ring

Bengt Beyer-Ebbesen, Mark Cowtan, Sharam Hakimi, Robert D. Love
July 1997 **International Journal of Network Management**, Volume 7 Issue 4

Publisher: John Wiley & Sons, Inc.

Full text available: [pdf\(472.60 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)



This article considers the problems caused by ever increasing traffic on Token Ring LANs. It shows how the new IEEE 802.5 standard for DTR addresses this problem, outlining scenarios and providing a migration strategy for evolving networks, using this new standard. © 1997 John Wiley & Sons, Ltd.



3 Using policies for effective network management

Michele J. Wright
March 1999 **International Journal of Network Management**, Volume 9 Issue 2

Publisher: John Wiley & Sons, Inc.

Full text available: [pdf\(469.84 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)



The goal of policy-based management is to reduce the complex administration of networks. Copyright © 1999 John Wiley & Sons, Ltd.



4 An OPNET-based simulation approach for deploying VoIP

K. Salah, A. Alkhoraify
May 2006 **International Journal of Network Management**, Volume 16 Issue 3

Publisher: John Wiley & Sons, Inc.

Full text available: [pdf\(1.64 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

These days a massive deployment of VoIP is taking place over IP networks. VoIP deployment is a challenging task for network researchers and engineers. This paper presents a detailed simulation approach for deploying VoIP successfully. The simulation uses the OPNET network simulator. Recently OPNET has gained a considerable popularity in both academia and industry, but there is no formal or known approach or methodology as to how OPNET can be used to assess the support and readiness of an existing ...

5 Topology discovery in heterogeneous IP networks: the NetInventory system

Yuri Breitbart, Minos Garofalakis, Ben Jai, Cliff Martin, Rajeev Rastogi, Avi Silberschatz
June 2004 **IEEE/ACM Transactions on Networking (TON)**, Volume 12 Issue 3

Publisher: IEEE Press

Full text available: [pdf\(435.97 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

Knowledge of the up-to-date physical topology of an IP network is crucial to a number of critical network management tasks, including reactive and proactive resource management, event correlation, and root-cause analysis. Given the dynamic nature of today's IP networks, keeping track of topology information manually is a daunting (if not impossible) task. Thus, effective algorithms for automatically discovering physical network topology are necessary. Earlier work has typically concentrated on e ...

Keywords: IP network management, SNMP MIBs, physical network topology, switched Ethernet

6 Flexible network topologies for your computing lab: VLAN and router technology at work in the classroom

Robert Belles, Sandra Gorka, Jacob R. Miller
February 2002 **Journal of Computing Sciences in Colleges**, Volume 17 Issue 3

Publisher: Consortium for Computing Sciences in Colleges

Full text available: [pdf\(26.49 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In our multipurpose computer labs, we often have the necessity of reconfiguring the network topology to accommodate different classes. Some classes require that the lab be configured as a single network with Internet access while, at the other end of the spectrum, some classes require that the lab be configured as multiple, separate, small networks isolated from the Internet and the rest of the school. Historically, we have accomplished this using a series of hubs and switches to connect many sm ...

7 Security and mobility: VLAN over multi-hop wireless LAN system

 Susumu Matsui, Kazuya Monden, Tadanori Mizuno
September 2006 **Proceedings of the 2006 workshop on Broadband wireless access for ubiquitous networking BWAN '06**

Publisher: ACM Press

Full text available: [pdf\(116.24 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Recently, a multi-hop wireless LAN system that APs (Access Point) are connected by ad-hoc network technology each other without the need for any cable, is introduced to expand the coverage easily. And some WISPs (Wireless Internet Service Providers) announced that they will offer a public wireless LAN service in partnership with a company providing the physical wireless infrastructure. To realize that service, the VLAN technology is very useful. So we proposed VLAN over multi-hop wireless LAN sy ...

Keywords: VLAN, WLAN, ad-hoc network, multi-ESS-ID, routing, wireless internet

service provider

8 Short presentations with posters I: A network agent for diagnosis and analysis of real-time Ethernet networks

Hans Peter Löb, Rainer Buchty, Wolfgang Karl
October 2006 **Proceedings of the 2006 international conference on Compilers, architecture and synthesis for embedded systems CASES '06**

Publisher: ACM Press

Full text available: [pdf\(235.01 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Within the field of automation technology the use of Industrial Ethernet is rising. This in turn demands devices capable of precisely recording, analyzing, and manipulating communication data for diagnostic purposes. Existing solutions so far lack required flexibility or are unable to cope with sustained Gigabit-per-second data streams. This is especially true for general-purpose approaches employing ordinary network adapters and plain software-based analysis. In this paper we describe a flexible ...

Keywords: industrial Ethernet, monitoring, real-time, system-on-chip

9 Information visualization: The visualisation of application delay metrics for a customer network

Janet L. Wesson, Darelle van Greunen, Justin Rademan
November 2004 **Proceedings of the 3rd international conference on Computer graphics, virtual reality, visualisation and interaction in Africa AFRIGRAPH '04**

Publisher: ACM Press

Full text available: [pdf\(749.07 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Application services are fundamental network components that allow organizations the ability to operate efficiently. It has become essential for organizations to monitor the performance of these critical applications. Traditional network analysis tools, however, cannot cope with the size of today's network infrastructures and the volume of network data generated. The goal of this paper is to discuss the development of a visualisation system, called AppVis, that uses information visualisation ...

Keywords: application delay metrics, information visualisation, network management

10 Topology discovery for large ethernet networks

Bruce Lowekamp, David O'Hallaron, Thomas Gross
August 2001 **ACM SIGCOMM Computer Communication Review , Proceedings of the 2001 conference on Applications, technologies, architectures, and protocols for computer communications SIGCOMM '01**, Volume 31 Issue 4

Publisher: ACM Press

Full text available: [pdf\(144.05 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Accurate network topology information is important for both network management and application performance prediction. Most topology discovery research has focused on wide-area networks and examined topology only at the IP router level, ignoring the need for LAN topology information. Recent work has demonstrated that bridged Ethernet topology can be determined using standard SNMP MIBs; however, these algorithms require each bridge to learn about all other bridges in the network. Our approach to ...

11 Modeling very large area networks (VLANs) using an information flow approach

J. J. Wolf, B. Ghosh

August 1987 **1987 Symposium on the simulation of computer networks on Simulation of computer networks**

Publisher: IEEE Press

Additional Information: [full citation](#), [citations](#), [index terms](#)



12 Modelling layer 2 and layer 3 device bandwidths using B-node theory

S. Cikara, S. P. Maj, D. T. Shaw

January 2006 **Proceedings of the 29th Australasian Computer Science Conference - Volume 48 ACSC '06**

Publisher: Australian Computer Society, Inc.

Full text available:  [pdf\(269.35 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Modern computer networks contain an amalgamation of devices and technologies, with the performance exhibited by each central to digital communications. Varieties of methods exist to measure and/or predict these performance characteristics. "Rule-of-Thumb" is subjective and based on prior experience, typically offering little mathematical rigour. Benchmarks use different scales and units, with comparative results possibly requiring further interpretation. Stochastic modelling uses complex mathema ...

Keywords: B-Nodes, bandwidth, modelling, performance



13 Using a network simulation tool to engage students in active learning enhances their understanding of complex data communications concepts

Cecil Goldstein, Susanna Leisten, Karen Stark, Alan Tickle

January 2005 **Proceedings of the 7th Australasian conference on Computing education - Volume 42 ACE '05**

Publisher: Australian Computer Society, Inc.

Full text available:  [pdf\(118.82 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Computer networking concepts can be difficult to understand and teach as they frequently relate to complex and dynamic processes which are not readily visible or intuitive and are therefore problematic to conceptualise. Consequently teachers often incorporate simulation or visualisation tools to support the learning process, but often in a superficial way and without evaluating their effectiveness. To tackle this issue we designed the practical sessions in a 2nd year undergraduate netw ...

Keywords: active learning, data communication, evaluation, simulation, teaching



14 Features: The Family Dynamics of 802.11

 May 2003 **Queue**, Volume 1 Issue 3

Publisher: ACM Press

Full text available:  [pdf\(622.71 KB\)](#)  [html\(41.31 KB\)](#) Additional Information: [full citation](#), [citations](#), [index terms](#)



15 Wireless communication and networking: A hardware-engine for layer-2 classification in low-storage, ultra-high bandwidth environments

V. Papaefstathiou, I. Papaefstathiou

March 2006 **Proceedings of the conference on Design, automation and test in Europe: Designers' forum DATE '06**

Publisher: European Design and Automation Association



Full text available:  pdf(303.13 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Ethernet is the most common Layer-2 network protocol, and it is currently being deployed beyond the tight borders of LANs. In order to accommodate the needs of MANs and WANs, several QoS mechanisms employed at the MAC sublayer of Ethernet have been proposed. These QoS mechanisms require identification of network flows and the classification of Ethernet packets according to certain Ethernet header fields. In this paper, we propose a classification engine employed at the MAC sublayer which uses an ...

16 Predicate routing: enabling controlled networking 

 Timothy Roscoe, Steve Hand, Rebecca Isaacs, Richard Mortier, Paul Jardetzky
January 2003 **ACM SIGCOMM Computer Communication Review**, Volume 33 Issue 1

Publisher: ACM Press

Full text available:  pdf(166.27 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

17 Simulation: StarBED and SpringOS: large-scale general purpose network testbed 

 Toshiyuki Miyachi, Ken-ichi Chinen, Yoichi Shinoda
October 2006 **Proceedings of the 1st international conference on Performance evaluation methodologies and tools valuetools '06**

Publisher: ACM Press

Full text available:  pdf(134.60 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

New technologies for the Internet should be evaluated on environments dedicated to experiments, in order to avoid influences to critical services on the Internet. Generally software simulation and small testbed using real nodes are used to satisfy these requirements. There are several stages in developing new technologies, however, and these technologies may not satisfy requirements for all stages. We pointed the gap between the Internet and environment for experiment, especially in aspects of sc ...

Keywords: network testbed, supporting software for experiments

18 Cluster resource management: An integrated experimental environment for distributed systems and networks 

 Brian White, Jay Lepreau, Leigh Stoller, Robert Ricci, Shashi Guruprasad, Mac Newbold, Mike Hibler, Chad Barb, Abhijeet Joglekar
December 2002 **ACM SIGOPS Operating Systems Review**, Volume 36 Issue SI

Publisher: ACM Press

Full text available:  pdf(2.10 MB) Additional Information: [full citation](#), [abstract](#), [references](#)

Three experimental environments traditionally support network and distributed systems research: network emulators, network simulators, and live networks. The continued use of multiple approaches highlights both the value and inadequacy of each. Netbed, a descendant of Emulab, provides an experimentation facility that integrates these approaches, allowing researchers to configure and access networks composed of emulated, simulated, and wide-area nodes and links. Netbed's primary goals are ease ...

19 Wireless ATM network architectures 

Anna Hác
May 2001 **International Journal of Network Management**, Volume 11 Issue 3

Publisher: John Wiley & Sons, Inc.

Full text available:  pdf(93.42 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Emulated LAN technology supports mobile hosts in wireless ATM networks. This paper

introduces virtual LAN &ipar;VLAN) services using ATM LAN emulation technology which operates on a client/server model. One of the attractive features of the VLAN is the capability to group users into a broadcast domain. The focus of this paper is the issue of supporting quality of service to mobiles in a wireless ATM network. Copyright © 2001 John Wiley & Sons, Ltd.

20 Helping students help themselves: malware removal 

 Michael Vedders, Paul Boyum

November 2005 **Proceedings of the 33rd annual ACM SIGUCCS conference on User services SIGUCCS '05**

Publisher: ACM Press

Full text available:  pdf(191.00 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Viruses, spyware, and worms have become a growing problem for academic institutions in the past few years, with Bethel being no exception. Since 2003, our residential network has been plagued multiple times with large-scale virus outbreaks, causing outages and headaches for our users. Our initial plan for handling infected computers was to quarantine them and permit users to access only security-related web sites to assist them in cleaning their infected PC. When this plan failed due to the outag ...

Keywords: VLAN, black hole, kiosk, malware, spyware, virus, worms

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